

REMARKS

Claims 1-6 were examined and reported in the Office Action. Claims 1-6 are rejected. Claim 4 is canceled. Claims 1 and 5 are amended. Claims 1-3 and 5-6 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. 35 U.S.C. § 102(b)

It is asserted in the Office Action that claims 1-3 and 6 are rejected in the Office Action under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 6,496,172, issued to Hirakata ("Hirakata "). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP 2131,

[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' (Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' (Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. (In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)).

Applicant's amended claim 1 contains the limitations of

[a] method for driving an LCD, comprising providing an LCD with a plurality of column lines (C), a plurality of scan lines (M), and a plurality of pixels and by driving the LCD by a multiple pixel inversion technique comprising: providing a plurality of pixel matrices of $n \times m$ pixels in both the scan line and column line directions, where n and m are greater than 1; applying signals of a first polarity to every second pixel matrix in both the scan line and column line directions; applying signals of a second polarity to the remaining pixel matrices; and simultaneously inverting the polarities provided to said every second pixel matrix and said remaining pixel matrices, wherein a reduced total fringe field

effect to maintain contrast and a minimized flickering display is provided.

Applicant has amended claim 1 to make clear that a plurality of pixel matrices is provided in both the scan line direction and column line direction. Further, claim 1 is amended to state that signals of a first plurality are applied to every second pixel matrix in both the scan line and column line directions, signals of a second plurality are applied to the remaining pixel matrices and the polarities applied to the pixel matrices are simultaneously inverted.

Hirakata discloses a known system in which a full frame pattern of polarity is cycled through. Hirakata further discloses a system in which, a first frame, each column is provided with polarity, either positive or negative. In the second pattern, some of the columns have their polarity reversed. In the third pattern, again, some of the columns have their polarity reversed, while in the fourth pattern, again, some of the columns have their polarity reversed. From this, it can be seen that Hirakata does not disclose a method in which a plurality of pixel matrices are provided in both the scan line direction and the column line direction.

Hirakata does not teach, disclose or suggest that the plurality of matrices all have their polarity reversed simultaneously. Hirakata provides, as illustrated in Figures 15A and 15B, a known in frame inversion driving method and a gate line inversion driving method. As shown in Figure 16, Hirakata discloses column inversion, while in Figure 17 multiple column inversion is disclosed. Hirakata asserts that the known solutions, as disclosed, provide disclination patterns. This is seen to be a disadvantage, and Hirakata seeks to overcome this problem by moving the boundaries between oppositely polarized pixels, as shown in Figure 1.

In Applicant's claimed invention, the boundaries between inverted pixel polarities do not move. However, it has been found by Applicant that an advantage of a system where a plurality of pixel matrices are provided in both the scan line direction and the column line direction is that (especially for small pixel size micro-display devices) this driving scheme helps to diversify the fringe field effect so that the image is more uniform in comparison with a system with only either a plurality of rows or a plurality of columns being inverted. Therefore, no vertical or horizontal line due to the fringe field effect (which is seen with only row or column inversion) is provided.

As Hirakata explicitly teaches against such fixed boundaries between inverted polarities of pixels, there is no incentive for the skilled person to change the teaching of Hirakata to arrive at Applicant's claimed invention. In fact, the ordinary person skilled in the art is dissuaded from doing so as an undesirable effect is taught as occurring in Hirakata.

Therefore, Harakata does not teach, disclose or suggest Applicant's amended claim 1 limitations of

providing a plurality of pixel matrices of $n \times m$ pixels in both the scan line and column line directions, where n and m are greater than 1; applying signals of a first polarity to every second pixel matrix in both the scan line and column line directions; applying signals of a second polarity to the remaining pixel matrices; and simultaneously inverting the polarities provided to said every second pixel matrix and said remaining pixel matrices, wherein a reduced total fringe field effect to maintain contrast and a minimized flickering display is provided.

Therefore, since Hirakata does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. § 102(b) has not been adequately set forth relative to Hirakata. Thus, Applicant's amended claim 1 is not anticipated by Hirakata. Additionally, the claims that depend directly or indirectly on claim 1, namely claims 2 -3 and 6, are also not anticipated by Hirakata for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 102(b), rejection for claims 1-3 and 6 is respectfully requested.

II. 35 U.S.C. § 103(a)

It is asserted in the Office Action that claims 4 and 5 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Hirakata and further in view of U. S. Patent No. 6,295,043 issued to Hashimoto et al ("Hashimoto"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2142

[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” “*All words in a claim must be considered in judging the patentability of that claim against the prior art.*” (In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Applicant's claim 5 (claim 4 being cancelled) is directly dependent on amended claim 1. Applicant has addressed Hirakata regarding amended claim 1 above in section I.

Hashimoto discloses a display driving technique where the polarity of the image signal is inverted every field and every arbitrary n frames. Hashimoto, however, does not teach, disclose or suggest

providing a plurality of pixel matrices of $n \times m$ pixels in both the scan line and column line directions, where n and m are greater than 1; applying signals of a first polarity to every second pixel matrix in both the scan line and column line directions; applying signals of a second polarity to the remaining pixel matrices; and simultaneously inverting the polarities provided to said every second pixel matrix and said remaining pixel matrices, wherein a reduced total fringe field effect to maintain contrast and a minimized flickering display is provided.

Therefore, even if Hirakata were combined with Hashimoto, the resulting invention would still not include all of Applicant's claimed limitations. Since neither Hirakata, Hashimoto, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's

amended claim 1, as listed above, Applicant's amended claim 1 is not obvious over Hirakata in view of Hashimoto since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claim that directly depends from amended claim 1, namely claim 5, would also not be obvious over Hirakata in view of Hashimoto for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a), rejection for claim 5 is respectfully requested.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely 1-3 and 5-6, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

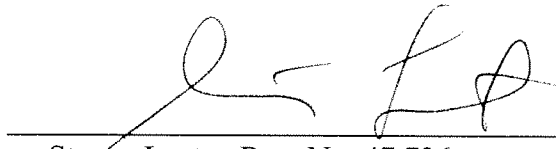
PETITION FOR EXTENSION OF TIME

Per 37 C.F.R. 1.136(a) and in connection with the Office Action mailed on July 27, 2006. Applicant respectfully petitions the Commissioner for a two (2) month extension of time, extending the period for response to April 28, 2006. The Commissioner is hereby authorized to charge payment to Deposit Account No. 02-2666 in the amount of \$450.00 to cover the petition filing fee for a 37 C.F.R. 1.17(a)(2) large entity. A duplicate copy of the fee transmittal is enclosed.

Respectfully submitted,

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Dated: December 18, 2006

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below to the United States Patent and Trademark Office.


Jean Svoboda

Date: December 18, 2006